

### Features

- ◆ Highest power density in 5.0" x 3.0" footprint
- ◆ Supplies 200 W (convection cooling!)
- ◆ Highest efficiency up to 95%
- ◆ Operating temperature range -25°C to +70°C
- ◆ Universal input 85 – 264 VAC
- ◆ Compliance with EN 61000-3-2 (PFC)
- ◆ Power Back immunity
- ◆ Low leakage current
- ◆ Protection class I and class II
- ◆ 3-year product warranty



The new TOP-200 Series AC/DC Power Supplies feature the highest power rating in the industry standard 3.0" x 5.0" (76.2 x 127 mm) footprint. They can supply up to 200 W output power with convection cooling over an industrial operating temperature range of -25°C to +70°C. This performance could be realized by a state of the art design providing an extremely high efficiency of >90 % which eliminates the need for a dedicated power supply cooling fan.

Compliance with global safety and EMC standards qualify these power supplies for worldwide markets. Approved for Class I and Class II applications, these switchers are suitable for industrial and IT systems but also for consumer products. High reliability is provided by use of industrial quality grade components and an excellent thermal management. This product offers an interesting power supply solution for many space and cost critical applications in commercial and industrial electronic equipment.

### Models

| Order Code  | Output Power max. | Output Voltage (fixed) | Output Current max. |
|-------------|-------------------|------------------------|---------------------|
| TOP 200-112 | 200 W             | 12 VDC                 | 16 A                |
| TOP 200-115 |                   | 15 VDC                 | 13 A                |
| TOP 200-124 |                   | 24 VDC                 | 8.3 A               |
| TOP 200-148 |                   | 48 VDC                 | 4.2 A               |

### Input Specifications

|                             |                               |  |
|-----------------------------|-------------------------------|--|
| Input voltage               | – nominal<br>– AC input range | 120 – 240 VAC (universal input)<br>85 – 264 with derating at low input<br>see power derating graph 1     |
| Input frequency             |                               | 47 – 63 Hz   |
| Harmonic limits             |                               | EN 61000-3-2, class A  |
| Zero load power consumption |                               | 3.6 W  |
| Recommended circuit breaker |                               | 6 A (characteristic C) or slow blow fuse.<br>For protection class II use two fuses<br>(line and neutral) |

### Output Specifications

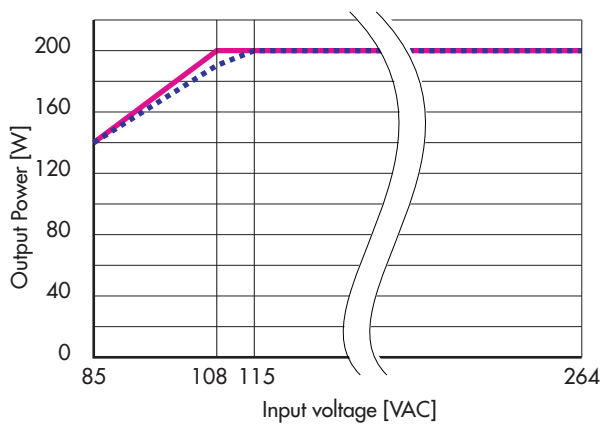
|                                      |  |  |
|--------------------------------------|--|--|
| Regulation                           | – Input and Load variation                                       | 1.0 % max.   |
| Ripple and noise (20Mhz Bandwidth)   |  | <120 mVp-p<br><150 mVp-p for 48 VDC models   |
| Overvoltage protection               | 12 & 15 VDC models:<br>24 & 48 VDC models:                       | >150 % of Vout<br>>125 % of Vout   |
| Power back immunity                  | 12 VDC model:<br>15 VDC model:<br>24 VDC model:<br>48 VDC model: | 16 V (18 V for 1 sec)<br>20 V (23 V for 1 sec)<br>35 V (40 V for 1 sec)<br>63 V (68 V for 1 sec) |
| Overload protection by current limit |  | at 120 – 150 % Iout max.   |
| Short circuit protection             |  | foldback (automatic recovery)  |
| Capacitive load                      | 12 & 15 VDC models:<br>24 VDC model:<br>48 VDC model:            | 15'000 µF max.<br>4'000 µF max.<br>1'000 µF max.   |

### General Specifications

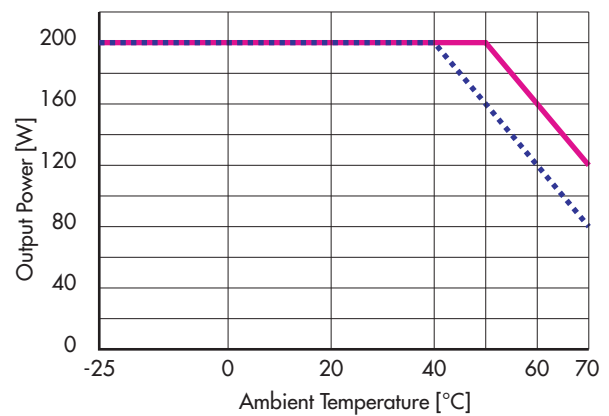
|                       |            |   |
|-----------------------|------------|---|
| Operating temperature | – derating | –25°C to +70°C (convection cooling)<br>see power derating graph 2 |
|-----------------------|------------|---|

#### Power derating

Graph 1:  
In respect to input voltage



Graph 2:  
in respect to ambient temperature



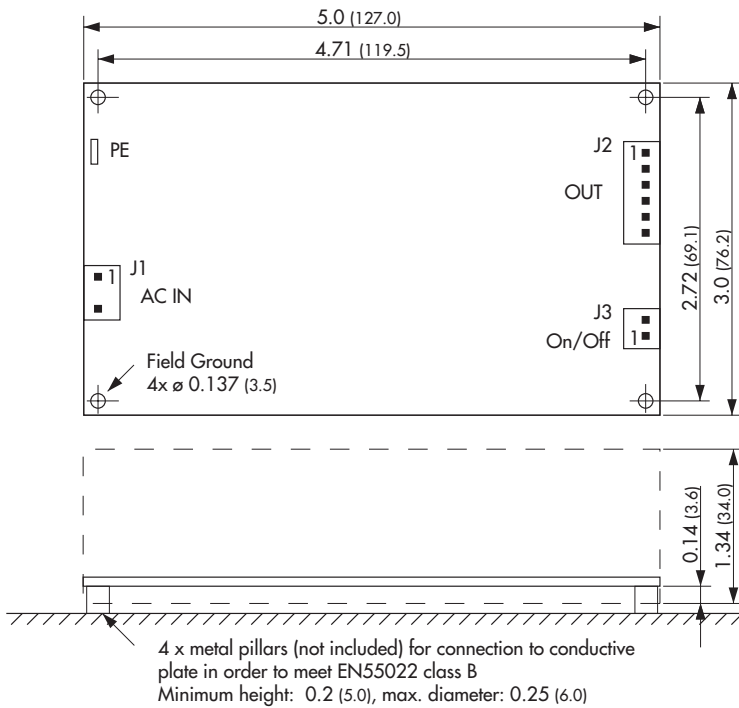
..... 12 & 15 VDC models      — 24 & 48 VDC models

**General Specifications**

|  |  |  |
|--|--|--|
| Humidity (non condensing)                      |  | 0 – 95 % rel. H max.   |
| Efficiency                                     | – Vin = 115 VAC                                    | 12 & 15 VDC models: 88 – 91 %  |
|  |  | 24 & 48 VDC models: 90 – 93 %  |
|  | – Vin = 230 VAC                                    | 12 & 15 VDC models: 90 – 93 %  |
|  |  | 24 & 48 VDC models: 92 – 95 %  |
| Switching frequency                            |  | 100 kHz typ. (pulse width modulation)  |
| Hold-up time                                   |  | 10 ms typ.   |
| Start-up time                                  | – Vin = 115 VAC                                    | <3.0s  |
|  | – Vin = 230 VAC                                    | <2.0s  |
| Remote On/Off                                  | – Off: connection to secondary ground              | J3 pin 1 connected to secondary ground will turn the unit off. Output voltage may pulse to 20% of nominal output voltage.  |
|  | – Off: applying external current                   | J3 pin 2 connected to an external current source of 10 mA will turn the unit off (no pulsing output)                       |
|  | – On: open contacts                                | J3 pin 1 & 2 open.   |
| Isolation voltage                              | – Input / Output                                   | 3000 VAC   |
|  | – Input / Field Ground                             | 1500 VAC   |
|  | – Output / Field Ground                            | 500 VAC  |
| Isolation resistance (at 500 VDC)              |  | 100 Mohm min.  |
| Earth leakage current                          |  | 500 µA max.  |
| Safety class (for built in use only)           |  | class I, class II prepared with second fuse  |
| Electromagnetic compatibility (EMC), emissions | – Conducted input RI suppression                   | EN 55022, class B (conductive plane to be connected to field ground)   |
|  | – Harmonic current emissions                       | IEC/EN 61000-3-2, class A  |
| Electromagnets compatibility (EMC), immunity   | – Electrostatic discharge ESD                      | IEC/EN 61000-4-2   |
|  | – RF field immunity                                | IEC/EN 61000-4-3   |
|  | – Electrical fast transients/burst immunity        | IEC/EN 61000-4-4   |
|  | – Surge  | IEC/EN 61000-4-5   |
|  | – Conducted RF                                     | IEC/EN 61000-4-6   |
|  | – Voltage dip                                      | IEC/EN 61000-4-11  |
| Safety approvals and Certificate               | – CB test certificate for IEC/EN 60950-1           | <a href="http://www.tracopower.com/products/top200-cb.pdf">www.tracopower.com/products/top200-cb.pdf</a>                   |
|  | – CSA certificate For UL/cUL 60950-1               | <a href="http://www.tracopower.com/products/top200-csa.pdf">www.tracopower.com/products/top200-csa.pdf</a>                 |
|  | – Certificate for other standards (Bureau Veritas) | IEC/EN 60950-1<br><a href="http://www.tracopower.com/products/top200-bg.pdf">www.tracopower.com/products/top200-bg.pdf</a> |
| Environment                                    | – Vibration acc. IEC 60068-2-6;                    | 3 axis, sine sweep, 10 – 55Hz, 0.075 mm  |
|  | – Shock acc. IEC 60068-2-27                        | 3 axis, 15g half sine, 11ms  |
| Connection                                     |  | pin connector (Molex)  |
| Weight   |  | 315 g (8.93 oz)  |
| Installation instruction                       |  | <a href="http://www.tracopower.com/products/top200-inst.pdf">www.tracopower.com/products/top200-inst.pdf</a>               |

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

**Dimensions**



**J1:** Molex Series 41791  
mates with Molex crimp terminal: 08-52-0072  
and terminal housing: 09-50-3031

**J2:** Molex Series 41791  
mates with Molex crimp terminal: 08-52-0072  
and terminal housing: 09-50-3061

**J3:** Molex Series KK  
mates with Molex crimp terminal: 08-50-0032  
and terminal housing: 22-01-2025

**PE:** Faston  
mates with TAB-6.3 (1/4")

Dimensions in Inch, ( ) = mm

| <b>J1</b> |         |
|-----------|---------|
| Pin       |         |
| 1         | AC in L |
| 2         | AC in N |

| <b>J2</b> |        |
|-----------|--------|
| Pin       | J2     |
| 1         | + Vout |
| 2         | + Vout |
| 3         | + Vout |
| 4         | - Vout |
| 5         | - Vout |
| 6         | - Vout |

| <b>J3</b> |         |
|-----------|---------|
| Pin       |         |
| 1         | contact |
| 2         | current |

PE to connect to protective earth if used as safety class I unit  
J3 pin 1 connected to secondary ground will turn the unit off.  
Output voltage may pulse to 20% of nominal output voltage.  
J3 pin 2 connected to an external current source of 10 mA will turn the unit off (no pulsing output)  
J3 pin 1 & 2 open: Unit is on

Specifications can be changed any time without notice.